



650nm Dot Laser Diode Modules, Plastic Housing, Dia. 6.5mm

PPA Series



Overview

The Lasermate PPA series laser diode module is designed for OEM applications with lowest cost, plastic housing, and miniature size.

Features

- Lowest cost 650nm laser diode module
- Dimensions: Dia. 6.5mm x L 14.5mm
- Automatic Power Control (APC) IC inside
- High quality plastic collimating lens
- Low current consumption of APC circuit
- Plastic housing
- Good laser beam profile

Applications

- Pointing
- Leveling
- Sensing

Product Overview

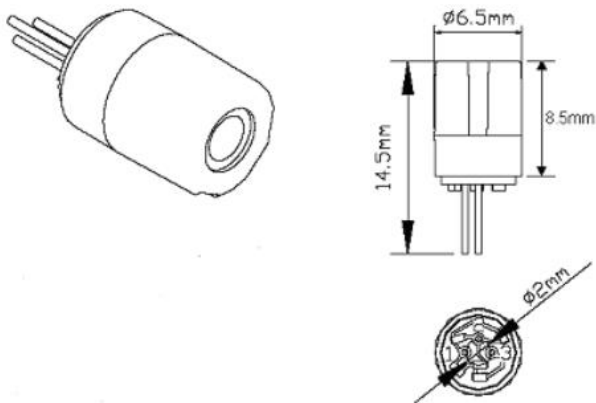
| Part Number | Wavelength (nm) | Optical output power (mW) | Laser class | Operating current typical (mA) | Operating voltage typical (VDC) | Operating temperature (°C) |
|-------------|-----------------|---------------------------|-------------|--------------------------------|---------------------------------|----------------------------|
| PPA6501F3PA | 650 | <1 | II | 26 | 3 | 0 to 40 |
| PPA6503F3PA | 650 | <5 | IIIa | 26 | 3 | 0 to 40 |

Specifications of PPA Series Laser Diode Modules

| Absolute Maximum Ratings | | | |
|-----------------------------------|-----------|---------|------|
| Parameter | Symbol | Rating | Unit |
| Power supply voltage | V_{CC} | 3.3 | V |
| Laser module optical output power | P_O | <3 | mW |
| Operation temperature | T_{opr} | 0 to 40 | °C |
| Storage temperature | T_{stg} | 0 to 60 | °C |

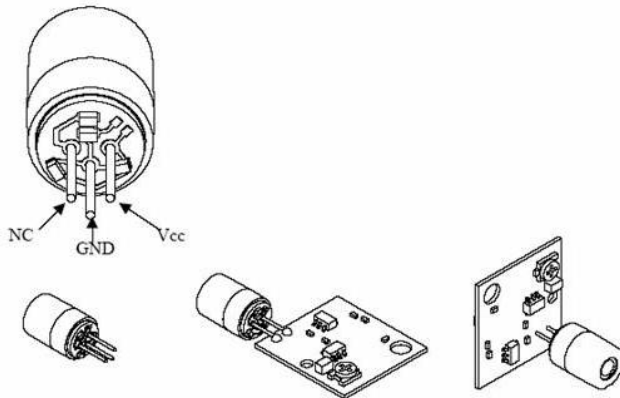
| Electrical and Optical Characteristics ($T_c = 25^\circ\text{C}$) | | | | | | | | |
|---|-------------|-----------|------|------|------|------|--|--|
| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Conditions | |
| Wavelength | | λ | 645 | 655 | 660 | nm | $P_o = <3\text{mW}$ | |
| Output power | PPA6501F3PA | P_{out} | 0.4 | 0.6 | 0.9 | mW | $V_{CC} = 3\text{V}$ | |
| | PPA6503F3PA | | 2.2 | - | 3.0 | mW | $V_{CC} = 3\text{V}$ | |
| Operation current | | I_{op} | - | 26 | 35 | mA | $P_o = 2.5\text{mW}, V_{CC} = 3\text{V}$ | |
| Operation voltage | | V_{op} | 2.5 | 3 | 3.3 | V | | |
| Laser beam spot size at 10m | | | | | | | <10mm | |
| Divergence angle | | | | | | | 1.1mrad | |
| Mean time to failure (MTTF) @ 3mW, 25°C | | | | | | | >10,000hrs | |

Outline Dimensions of PPA Series Laser Diode Modules (unit: mm)

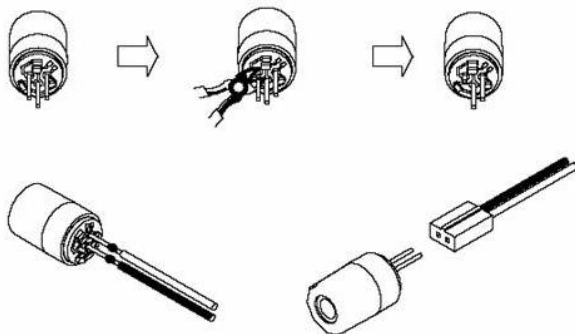


Instruction Manual for PPA Series Laser Diode Modules

DC Power connection mode 1



DC Power connection mode 2



Laser Safety Precautions

1. Do not look directly into the laser beam. The laser beam may cause severe damage to the human eye.
2. Do not contaminate the lens by soiling, oil, or chemicals.

Additional Notes

- The PPA series laser modules are designated solely as OEM components for incorporation into the customer's end products. Therefore, it is the customer's responsibility to comply with the appropriate requirements of FDA 21CFR, section 1040.10 and 1040.11 for complete laser products. For the code of FDA regulations, please refer to [FDA Performance Standards for Light-Emitting Products](#) for detailed information.
- Specifications are subject to change without notice.



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